REMARKS

Claims 6-11, 13-16 and 18-28 are currently pending in the application. By this amendment, claims 6-8, 15 and 19 are amended and claims 26-28 are added for the Examiner's consideration. Support for the added claims and amendments is provided at least at page 22 of the specification and the claims, as originally filed. No new matter is added. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Objection to Claims

Claims 7, 10, and 20-22 were objected to. Claim 7 has been amended to overcome the objection thereto. Applicants now request withdrawal of the objection to the claims.

112, 2nd Paragraph Rejection

Claims 19 and 25 were rejected under 35 U.S.C. §112, 2nd paragraph for being indefinite. This rejection is respectfully traversed.

Applicants note that the sprue and the union hole are two features of the invention. The sprue is formed during the molding process and, in gravity casting methods, is a portion of the mold that is typically additional material. After the sprue is formed during the molding process, the union hole is formed by processing the sprue. Applicants are of the opinion that this is not confusing and that no amendments are needed.

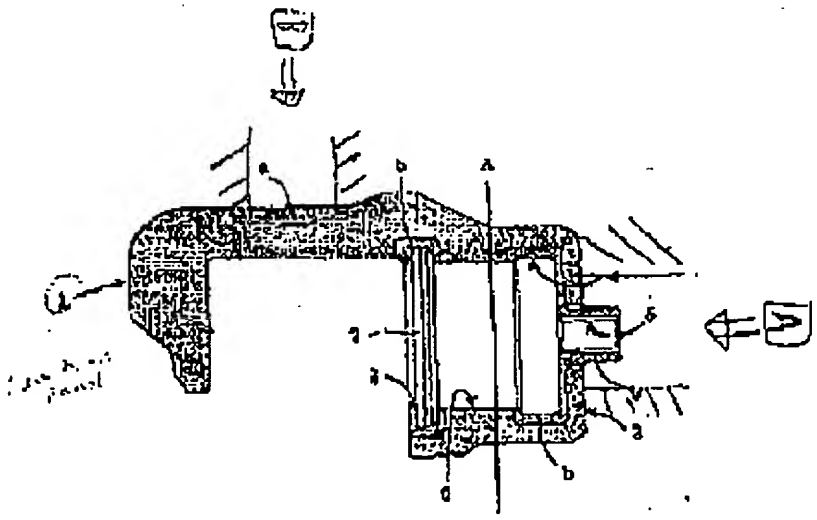
Applicants now request withdrawal of the §112, 2nd paragraph rejection.

Prior Art Rejections

Claims 6, 9, 13-17, 19, 23, 24 and 25 were rejected under 35 U.S.C. §103(a) over JP-835530 in view of USPN 4,705,093 to Ogino. Claims 7, 8, 10 and 11 were rejected under §103(a) over JP-835530 in view of Ogino, in view of JP-1146718. Claim 18 was rejected under §103(a) over JP-835530 in view of Ogino, and in further view of WIPO 98/27353 (USPN

6,298,954). Claims 20-22 were rejected under §103(a) over JP-835530 in view of Ogino and JP-1146718 in further view of WIPO 98/27353. These rejections are traversed.

Applicants again must reiterate that JP8-35530 does not show that a flange portion of the union hole is formed by processing the sprue after the casting. As previously argued, and again strongly emphasized, it is simply impossible to use the inlet hole 5 of JP8-35530 as a sprue. In the case where the inlet hole 5 is utilized as a sprue and a molten metal is provided from the direction A (as shown below in the figure reproduced), the hole 5 would be closed. In order to prevent the hole 5 from being closed, for example, the molten metal must be provided from the B-direction at a place other than the hole 5. This being the case, it is impossible for the hole to be used as a sprue.



The Examiner further argued that the Webster's Collegiate Dictionary 10th Edition defines a sprue as a hole through which metal or plastic is poured into the gate. Although this is true, it would appear that the Examiner is confusing the cast sprue with the mold sprue and the union hole. In the claimed invention, the sprue is the resultant of the molten metal being poured through the sprue hole of the mold. Once poured, the sprue is a solid piece of some height. It is

this sprue that is then processed to form the union hole in which working fluid can now be used with the caliper. Also, although Ogino may teach the use of gravity casting, as argued by the Examiner, it is again submitted by Applicants that the hole 5 of JP8-35530 cannot be used as a sprue, for the reasons discussed above. Accordingly, the combination of JP8-35530 and Ogino cannot be used to achieve the claimed invention.

In any event, the independent claims have been amended to incorporate the subject matter of claim 7. The subject matter of claim 7 included the specific ratio of volume of the central chamber to that of the reaction chamber and the central chamber to that of the action chamber. These specific ratios provide a great advantage over prior art systems, e.g., with the use of the materials disclosed and recited, the brake caliper can be properly fitted to the wheel without having the bridge interfering with the wheel, while also ensuring proper strength and rigidity of the action portion. In conventional systems using casting methods, this ratio has never been contemplated since the materials used, e.g., have different properties such as rigidity and strength. However, in the claimed invention, for example, the method of the present invention uses aluminum or aluminum alloy with the specific ratios. To the best of Applicants' knowledge, these specific ratios were never contemplated prior to the present invention.

Also, Applicants again submit that the supply of the molten material from the central portion where the solidification is slow can be continued due to the step by step supply effect based on the ratio of volume. This contributes to the elimination or prevention of any sink marks produced in the reaction portion and the caliper body. This was not contemplated in prior systems.

Additionally, Applicants submit that

> Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577 (Fed. Cir. 1984).

Further,

> Section 103 requires us to presume full knowledge by the inventor of the prior art in the filed o his endeavor ... but it does not require us to presume full knowledge by the inventor of prior art outside the filed of his endeavor, i.e., of nonanalogous art.

In re Wood, 599 F.2d 10322 at 1036.

To this end, Applicants have again carefully reviewed JP-H1-146718 and submit that this reference does not teach or is even remotely related to caliper brakes or a material used for caliper brakes. This reference, or any of the other references, does not provide any motivation to combine JP-H1-146718 with any of the remaining references. In fact, the JP-H1-146718 would clearly fall into the nonanalogous art category. That is, this reference is not even reasonably pertinent to the particular problem with which the inventor was involved, e.g., molding of caliper brakes.

After careful review of JP-H1-146718, it is clear that this reference is directed to injection molding processes of resins, a material that would not be used for casting a caliper body of a vehicular disc brake. Referring to the Abstract of JP-H1-146718, this reference teaches storing data on compression pressure and variations of volume due to cooling temperature on a storage medium for injection compression processes. Injection compression processes are used for plastics and resins, not for parts such as a caliper body of a vehicular disc brake. For this, Applicants direct the Examiner's attention to the Abstract which recites in part:

> P-v-t diagram (pressure-volume-temperature relative diagram) of each resin is stored in a floppy disc or an optical disc and the mold compressing conditions such as the cavity volume of the mold product, injection dwell pressure, mold compression pressure, cooling temperature, volume ratio of mold opening and the like are plotted on the diagrams, which are displayed on the screen (CRT). (Emphasis added.)

This reference is thus directed to injection molding processes of resins and other types of plastic. A compression injection molding process is not used for caliper brakes of a vehicle. It would thus not have been obvious to one of ordinary skill in the art to use this reference, in combination with the other references, to make such a combination in order to achieve the claimed invention. Said otherwise, there would be no motivation to make such a combination of reference JP-H1-146718 with the other references since JP8-35530 is directed to such a disparate art, nonanalogous, and lacks any teaching or suggestion to make any such combination (as suggested by the Examiner). In this case, simply, it is Applicants' opinion that the Examiner cannot point to something in the prior art that suggests in some way a modification of a particular reference or combination with JP-H1-146718 in order to arrive at the claimed invention.

Applicants further submit that JP-H1-146718 only does not address the same problems, but does not even show the same ratios as provided in the claimed invention. For example, JP-H1-146718 refers to volume ratios, in general, of the mold opening and the like. It does not address any specific ratios, as recited in the claimed invention (which provides many advantages), and it also does not even address the same portions of the mold which are used by the claimed invention.

The dependent claims are also distinguishable over the prior art references for the reasons discussed above. Thus, Applicants now request that the prior art rejections be withdrawn and that the entire application be passed to issuance.

Added Claims

Applicants add claims 26-28 for the Examiner's consideration. Claims 26 and 28 are directed to the sprue being processed to form the union hole. Claim 28 is directed to the use of the specific volumes. These claims are distinguishable over the prior art references.

Conclusion

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies and credit any overpayment of fees to Attorney's Deposit Account No. 23-1951.

Respectfully submitted,

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